# Relocation of Small and Medium Industries (SMIs) Manufacturing to Non-Metropolitan Areas: A Lesson from USA and Canada

Abdul Aziz Ab. Latif

*Small and Medium Industries (SMIs) manufacturing are important to any nation because they are the sources of new ideas, new form of competitive advantage, create new jobs, create income, and other multiplier effects associated with them. The future economic health of any nation depends on the country's ability to achieve greater success through small and medium industries. The availability of raw materials and cheap labour are the major contributing factors toward the trend of relocation of SMIs from urban to rural areas. The other explanation of the decentralisation phenomenon is the product life cycle theory of industrial relocation. The choice of location by SMIs managers is based on expectation to fulfil firm's goal, and how it fits together with firm's short and long-term objectives. There are six primary concerns for selection of rural industrial locations. Those concerns are labour cost, labour unionisation, proximity to supplier of resources, proximity to market, proximity to other firm's facilities, and quality of life in the area. With the availability of telecommunication technologies and transportation the ability of SMIs to operate cheaply even though they are located in remote areas would be enhanced.*

*Key words: competitive advantage, economic health, industrial relocation, product life cycle theory, Small and Medium Industries*

*Perkilangan Industri Kecil dan Sederhana (IKS) penting kepada sesebuah negara kerana ia merupakan sumber idea baru, bentuk baru dalam kelebihan persaingan, mewujudkan pekerjaan baru, memberi pendapatan dan kesan berganda kepada yang berkaitan. Masa hadapan kemajuan sesebuah ekonomi bergantung kepada keupayaan negara mencapai kejayaan Industri Kecil dan Sederhana. Kedapatan bahan mentah dan tenaga buruh yang murah menjadi faktor penyumbang utama ke arah trend penempatan semula IKS dari kawasan bandar ke kawasan luar bandar. Satu lagi penjelasan berlakunya pemencaran ini ialah teori kitaran hayat produk bagi*

*penempatan perindustrian. Pemilihan lokasi oleh pengurus IKS berdasarkan jangkaan untuk memenuhi matlamat firma, dan kesesuaian matlamat ini dengan objektif jangka pendek dan jangka panjang. Terdapat enam perhatian utama bagi pemilihan lokasi perindustrian desa. Perhatian tersebut ialah kos tenaga buruh, kesatuan buruh, kehampiran dengan pembekal sumber, kehanpiran dengan pasaran, kehampiran dengan kemudahan firma lain, dan kualiti taraf hidup di kawasan tersebut. Dengan terdapatnya teknologi telekomunikasi dan pengangkutan, keupayaan IKS untuk beroperasi dengan lebih murah dapat ditingkatkan walaupun mereka berada di kawasan yang terpencil.*

*Kata kunci: kelebihan persaingan, kesihatan ekonomi, penempatan semula industri, teori kitaran hayat produk, Industri Kecil dan Sederhana*

Manufacturing activities traditionally were carried out in the larger central places within the metropolitan areas. Barkley (1993) suggests that during the industrial revolution the location of manufacturing in these areas was attributed to a number of interwoven factors: (1) urban location generally provided superior access to labour and raw materials; (2) the availability of capital in urban areas also worked to the advantage of the larger central places; (3) the development of railroad network contributed to both the overall industrialisation process and then urban concentration of manufacturing; (4) urban areas have served as incubators for technological improvement and inventions; and (5) the industrialisation-urbanisation process contributed to and benefited from the development of localisation economies. However, during the 1960s and 1970s, growth in manufacturing contributed greatly to a general economic renaissance in many non-metropolitan areas of the United States and Canada (Kale & Lonsdale, 1987). Many small communities previously experiencing decreases in their employment bases became locations for new branch plants and relocating manufacturers.

The decentralisation of economic activity to non-metropolitan areas had accelerated; and as a result, the rate of job growth in rural areas finally surpassed that in metropolitan areas (Barkley, 1993). In addition, several other studies such as by Frederick and Bluestone (1988) and Estall (1983) found that during the 1960s and 1970s employment in manufacturing increased more rapidly for non-metropolitan areas than metropolitan areas. During these times interest in topic of non-metropolitan manufacturing grew considerably.





The popular target for the non-metropolitan manufacturing is the development of small- and medium-sized industries (SMIs).[1] To justify this initiative, policy makers frequently cited studies showing that SMIs created more jobs, developed stronger economic linkages to the community, and adapted more easily to rapidly changing national and international global market than large enterprises (Miller, 1993). Moreover, the frequent argument for targeting SMIs is that they create most new jobs and contributed to employment stability. Several studies, for example by Arminton and Odle (1982), and Birch (1979), indicate that SMIs generated between 60 to 100 percent of annual net employment growth in the U.S economy since the early 1970s. Other studies by Birch (1987), Svensson (1981), and Teitz, Glasmeir and Svensson (1981) indicate that during recession smaller enterprises cushion the economy by staying in business and keeping their workers while experiencing reduced profit.

## Trend in Non-Metropolitan Manufacturing in Canada and USA

An update report on "The Diverse Social and Economic Structure on Non-Metropolitan America (Hardy & Ross, 1990) indicates that the 1980s brought an abrupt reversal of rural growth trend of the 1970s. The industrial and occupational restructuring of the rural economy influenced by the declines in farming and mining and growth in the service and construction industries continued. During the 1980-82 economic recession, the non-metropolitan unemployment surpassed metropolitan employment, unlike the decade of the 1970s. During that recession period nearly 600,000 manufacturing jobs were lost. However, 1986 had recovered less than half of the jobs lost. During this economic slowdown, many farms and non-farm financial institutions went out of business, caused non-metropolitan earnings to stagnate, metro-nonmetro income gap widened, and rural poverty on the rise. It has been suggested that another contributing factor to declining of manufacturing jobs in non-metro areas is the event of the global market place. In the 1970s the US export rose to over 10 percent of gross national product. Then the rise in dollar value from 1980 to 1985 raised export prices and brought severe pressure to US exports and a rise in imports. Many manufacturers closed rural plants and contracted for overseas production. Lemyre (1985) found that, in Canada, after declining between 1951 and 1986, employment in non-metropolitan manufacturing increased by 6 percent from 1961 to 1971, and by 24 percent by 1971 to 1981. He discovered that the growth of non-metropolitan manufacturing was largely generated by lower-technology sector.

[1]In Canada small industries are often described as firms having fewer than 100 employees in manufacturing sector and fewer than 50 employees in service sector. Mid-sized industries are often described as having 100 to 500 employees. Distinctions became blurred, however, owing to dynamic changes in the economy and innovation business organisations.

Kale and Lonsdale (1987) suggest that the general patterns of metro-nonmetro in Canada and US have been relatively similar. According to Kale and Lonsdale (1987), there are several factors contributing to the trends in the location of non-metropolitan manufacturing in the Canada and the US. Historically, the most important factor has been raw materials. Much of early growth in the rural areas centred upon agriculture and food processing, forestry, and timber products, or mining and mineral processing. Although raw materials remain a major influence on the location of non-metropolitan manufacturing, other factors such as labour availability, labour skills, labour productivity, improved transportation, the decentralisation of population and markets, the availability of industrial sites and buildings are also major contributors to the growth. Moreover, manufacturing was the major source of local export earnings for many rural economies. In 1980s, however, with heightened foreign competition and new labour-saving technology, manufacturing employment stagnated, and decentralisation from urban to rural areas slowed dramatically. As a result, manufacturing was no longer able to replace employment losses in agriculture and mining.

## The Importance of Non-Metropolitan Manufacturing to the Economies

It has been suggested that job creation is one of the most important contributions made by small and medium manufacturing. Industry Canada/ Statistic Canada (1991) reported that since 1970s, small firms have been key contributors to net job creation: between 1979 and 1989, business with fewer than one hundred employees created 2.3 million new jobs or 87 percent of all growth in employment during that period.

In the USA in 1989, there were almost four hundred thousand small manufacturing companies (US Small Business Administration, 1989). These companies were not only employed more than eight million workers, but they were also the key component in determining the relative competitiveness of the country's manufacturing base. Many smaller manufacturing companies, whose major customers used to be large plants, experienced declining sales and were faced with the challenge of developing new products and new markets. In addition, production requirement became more severe as greater attention was placed by their customers on high quality, quicker delivery, and, of course, competitive pricing (Ahlbrandt, 1988). Many sold products not only domestically but also globally and thus competing directly against foreign manufacturers. To those small manufacturers that are located in non-metropolitan areas, they were important not only because of the employment they provided but also they comprised an important part of the supplier network.

In developing country, for example Malaysia, SMI is defined as a firm with annual sales turnover of not exceeding RM25 million and full-time employees of not exceeding 150 (MITI, 1998).
US$1= RM3.80





A study by Adam, Casey, Montille, and Goldfein (1989) on the Trade Centres on the Upper Midwest shows that in 1989 manufacturing had the largest number of establishment (3,043) with each establishment employing more than fifty people. Out of these, small and medium manufacturing that employ between 50 and 99 employees accounted for 1173 establishments. The economic base theory suggests that the local employment attributable to a manufacturing operation is generally not limited to individuals employed by the firm (Barkley, Dahlgran, & Smith, 1989). Employment in other sectors of the local economy may be generated by the manufacturers as a result of expenditures by firms for locally provided goods and services, and local non-labour input demanded by the firms. Several findings have shown that the manufacturers with strong linkages to the local economy are characterised by high local employment multiplier. For example, a study by Stabler and Olfert (1992) suggests that the presence of manufacturing activity of locally substantial proportions is associated with above-average retention of trade centre status and performance considerably better than communities with fewer manufacturing jobs. Stabler and Olfert (1992) also conclude that one hundred or more manufacturing jobs assist in stabilising a community which is well situated on the regional transportation network and which has a sufficient complement of trade and services outlet for it to play a local role in the trade centre system. Consequently, the growth of manufacturing in non-metropolitan areas will generate significant secondary effects. As suggested by Stabler and Olfert (1992), a substantial manufacturing employment can contribute to the stability and perhaps even enhance the trade centre status of a community that is favourably situated and presently viable within the trade centre network.

## The Shifting of Manufacturing Location

The shift of manufacturing activity away from larger cities to non-metropolitan areas has encouraged researchers to search for explanations based on structural change in the manufacturing sector and resulting increase in the comparative advantage of rural locations. Vernon (1966) proposed that the optimal location for production activity will change as an industry evolves through life cycle and production requirements and corporate strategy change within international investment and trade context. Thomson's (1969) "filtering-down process" extended the regional division of labour theory to urban-rural shifts in manufacturing activity.

The central thesis of these explanations is that the manufacturing process evolves through distinct phases as an industry develops. These evolving industrial characteristics result in changing spatial preferences for manufacturing activities and dispersal down through the urban hierarchy of these activities. The most accepted explanation of the decentralisation phenomenon is the product life cycle theory of industrial location (Markusen, 1986). This theory hypothesises that

industries disperse down through the urban hierarchy as they progress through the different phases of their product life cycle. In the early innovative stage of this cycle, a firm is characterised by high unit cost of production, relatively high product prices and profits, a relatively skilled labour force, a high proportion of scientific and engineering inputs, and a reliance on outside business services (Barkley, 1988). Corporate priorities during this phase are to maximise market outreach and market shares, and spatial preference is for a location near principal markets and major research institutions. Thus, industries in the innovative stage of their life cycle are generally located in large metropolitan centres because of the availability of skilled labour and specialised goods and services. However, over time new firms are attracted to the industry and competition increases, profit declines, production becomes more routinised, labour skilled requirement falls, and many previously purchased services are provided internally.

During the mature phase, firms decentralise to the rural areas in an effort to reduce production costs and maintain acceptable profit margin. The existence of multi-plant firms within industry further encourages this decentralisation by permitting only those branches engaged in the most routine operations to relocate to rural areas. The firm's research and development, sales, and administrative functions may remain in urban areas where they have their locational advantage.

Based on the product life cycle theory, we can suggest that non-metropolitan areas are viable locations for highly routinised, mature manufacturing especially those with small and medium sizes. These are the firms that have the desire to reduce production costs. Another argument behind the rural-urban shifting of manufacturing is the continued displacement of labour by machinery as production processes become more capital intensive (Fothergill & Gudgin, 1982). Capital investment linked to technological change results in the substitution of capital for labour and a loss of jobs at the urban location unless the facility can accommodate both new capital and the current labour force. In urban areas, however, along with high land prices, it may be impractical to expand the manufacturing facilities. Thus, production will be shifted to plants in fringe and rural areas where land constraints are less binding.

## The Shifting of SMIs High Technology to Non-Metropolitan Areas

As the product life cycle theory suggests, an urban-rural shift in high technology product and employment will occur as industries in this sector mature and their production processes become more routine. For example, a study by Barkley (1988) found that slowly growing, lower-labour-skilled mature high technology industries shifted employment to primarily non-adjacent counties and rural areas in the Southern and Plain States of the U.S.A. Employment in mature high technology industries is shifting to areas with relatively low labour cost, while industries in their growth and innovative stages are remaining close to the source of skilled labour and specialised inputs. Another major explanatory factor in rural





high technology location is the presence of traditional rural industries such as agriculture and mining (Glasmeier, 1993). The implication is that the rural high technology growth is significantly affected by growth in traditional rural industries and neither independent or nor replacement for them. Therefore we might conclude that efforts to stimulate growth in the high technology sectors of manufacturing are unlikely to have much impact on rural economic development unless they are tied to concurrent efforts to increase the development of traditional rural sectors.

## Factors Affecting the Choice of Non-Metropolitan Areas as Location By Small and Medium Manufacturing

The choice of a suitable location by the SMIs manufacturing may spell the difference between business success and failure. All the stakeholders are interested in knowing what constitutes a good location for such enterprises. From a social standpoint, accurate weighing of comparative costs and return is especially necessary in the case of private monopoly and public enterprises, where bad location may spell an indefinitely continued waste of resources rather than prompt elimination of a private venture by competition.

For most SMIs manufacturing, the evaluation of a proposed business location includes a systematic consideration of their costs and benefits. The capital appropriation request for the location, and the documentation that stands behind it, typically include a raft of figures and qualitative considerations. As much can be quantified, site preparation costs, construction or purchase or renovation costs, equipment costs, labour and fringe benefit costs, raw materials costs, account receivables, freight in freight out expenses, taxes, management costs, and forecast of revenues expected to be generated by the manufacturing plants. Often costs and benefits are combined in net present value or internal rate of return calculations that summarise the projected financial attractiveness of the location. The qualitative consideration then serves to support or to temper the financial analysis.

While the sophistication of the financial and qualitative aspects of the capital appropriation request and its supporting documents can vary markedly among SMIs, and while assembling the data usually requires repeated iterations before it is accomplished satisfactorily, managers of SMIs may feel comfortable with the evaluation and review. What usually makes the location decision uncomfortable for many small and medium firms is not the final steps of the evaluation but the beginning steps of the process where potential locations in non-metropolitan areas must be generated to satisfy acknowledged capacity needs.

The first task of the location choice by the SMI managers is to understand thoroughly the reasons for any new plant, how it is expected to fulfil the firm's goal, and how it fits together with the firm's short and long run objectives. From this understanding, the managers often see essential criteria that are common to the

industry, springing from its economics, which include the vigour of competition, supply and distribution costs, production technologies, new product development, value added expenses, production seasonality or cyclical, and the rate of industry growth. These criteria will provide the SMIs with important views of how they see their competitive position within the industry.

In choosing non-metropolitan as the location by SMIs manufacturing, managers should be concerned on various issues that might influence the operation of the firms. Schmenner (1982) suggests that six requirements proved dominant that become the controlling influence throughout the location choice:

(1) Primary concern for labour cost—The cost of labour is a major constrain for highly competitive industries such as apparel, leather, furniture, and consumer electronics. It is a minor concern to many capital-intensive industries;

(2) Primary concerns for labour unionisation—This ranks high with labour sensitive firms, many speciality products firms, and makers of industrial equipment;

(3) Primary concern for proximity to market—Manufacturing firms such as paper converting, plastic fabrication, and many others small manufacturing are constrained by transportation costs;

(4) Primary concern for proximity to supplies or resources—Several industries are tied up to certain supplies or resources: paper manufacturing must be near trees and water, and industries using a lot of petrochemical must be near pipelines;

(5) Primary concern for proximity to other firms' facilities—Some SMI manufacturing plants cannot live alone; they operate as satellites of other plants. Without a steady stream of supplies, work in process inventories, management know-how, engineering talent, and the like from other plants, such plants would wilt; and

(6) Primary concern for the quality of life in an area—The most fearsome competitive advantage especially the high technology industry can wield is a happy, productive workforce and management team.

## Economic Linkages

The first and the most significant linkage by a SMI manufacturing in the rural location is the employment generation either directly or indirectly in the local economy by its employees in the enterprise purchasing locally provided goods and services. This SMI with strong linkages to the local economy will generate significant secondary employment. A study by Miller (1993) shows that locally owned SMIs are likely to develop local linkages and generate indirect jobs and income in the non-metropolitan areas as compared to large enterprises that have established branch plants in the non-metropolitan areas. In addition, Barkley, Dahlgran, and Smith (1988), in a survey of non-metropolitan firms in the West, found that branch plants in high-technology industries had a weak backward linkages with local economy. Cocheba, Gilmer, and Mack (1986) also found those most support services for manufacturing such as consultant, and computer processing in the Tennessee Valley are located in urban area headquarters and core operations.

The second linkages of a SMI within the rural economy are the purchasing of non-labour inputs and services locally by the enterprises itself. For example, the purchasing of timber as input to sawmill and downstream industries; and agriculture products as input to grain milling and majority of food products. These linkages are related to transport, utilities, and other services bought locally, and rent paid to the landlords by the enterprise employees and the enterprise itself.

The third kind of linkages of a SMI with rural economy is the supply of goods and services by the enterprise to the local community. Miller (1993) indicates that the enterprise that sells locally also tends to purchase inputs locally because they perceive this behaviour as being good for business. By their nature, some of the sales took the form of intermediate goods and services, but majority of the small manufacturing may be assumed to be selling finished products.

Other kind of linkages which is relevant in the context of SMIs manufacturing are the application of higher technology which gives rise to local and regional markets for higher level skilled workers. More skilled technical and professional workers will earn higher salaries and so contribute to the local economy through their personal expenditure.

## The Prospects for Non-Metropolitan SMIs Manufacturing

Since the decade of 1970s, SMIs have created the largest share of the jobs in non-metropolitan areas especially in export oriented industries such as manufacturing (Miller, 1993). Studies also show that the SMIs under local ownership are more innovative than larger enterprises, and develop stronger ties to the community. The development of SMIs are enhanced by the expanding of the world market and the removing of some trade barriers such as the establishment of North American Free Trade Agreement (NAFTA), and improved telecommunication and production technologies. The outcome of these developments makes the enterprises get smaller, more efficient, more mobile, and more specialised. In the process ahead we would see increasing number of small enterprises doing more specialised contracting out activities by large corporations.

The development of telecommunication satellites, cellular phones, fibre optic cables, high speed faxes and microcomputers in the 1990s, would increase the ability of small and medium enterprises to move information more rapidly and

more cheaply, even though they are located in remote areas. These innovations would also reduce the effect of distance and thus eliminate the differences between urban centres and rural periphery. Judging from these technological developments, we would see in the near future that the administrative, control functions, and other supporting services are not necessarily be at the manufacturing location in non-metropolitan areas. They may be located at urban centres.

The closing of the gap between metropolitan and non-metropolitan areas by technological development would create SMIs in non-metropolitan areas more competitive than large enterprises in dealing with customers, suppliers, personnel, inventories, export and transportation of finished products. In addition, the emergence of computer-based technology in manufacturing will dramatically improve the productivity of small and medium producers. With the advancement of manufacturing technology, telecommunication, research and development, the awareness of policy makers and other supporting institutions with regard to the importance of SMIs manufacturing in the non-metropolitan areas, it seems that the prospect of the SMIs to grow in non-metropolitan areas is promising and challenging.

## Challenges for SMIs Non-Metropolitan Manufacturing

Growing SMIs manufacturing are important to any nation because they are the source of new ideas, new form of competitive advantage, and new jobs. The future economic health of any nation depends on the country's ability to achieve greater success through these small and medium enterprises. Small and medium firms today face a new and daunting set of challenges. New liberalised international trading agreements and a host of other changes have joined rapid technological progress, including a revolution in communications and information technology. These have combined to open up new market and create new opportunities. As a result of these changes, the characteristics of today's emerging economy are moving toward globalisation, more knowledge intensity, niche marketing, and competitive production technologies.

The erosion in the distinction between domestic and international markets means that small non-metropolitan manufacturing enterprises are finding it increasingly easy to source, produce, and deliver anywhere in the world. This offers small manufacturing enterprises access to new markets and new opportunities. At the same time, domestic markets are almost completely exposed to the full force of international competition. Even if the their locations are in the rural areas, small and medium manufacturing firms will have to act like exporters, competing against the best in the world.

In the knowledge-based economy, technology can confer significant competitive advantages on firms that know how to use it. For example, small-





manufacturing firms can use information technologies to create value, extend reach, and compete with large organisation on a more even playing field. At the same time, however, technological change can threaten a small and medium manufacturing if it does not keep up with or stay ahead of competitors. In the age of computerisation, automation, and rising productivity, fewer workers are required for any one task, and thus small and medium manufacturing enterprises can just be as cost effective as larger firms. Small and medium manufacturing enterprises in the non-metropolitan areas can even compete successfully against large enterprises by identifying and occupying small and medium tightly defined segments of the marketplace that they can serve better than anyone else. However, a high fluid of environment continuously presents small and medium manufacturing enterprises with new technologies, new markets, and new opportunities. At the same time, it challenges them to keep up with the latest developments. The enterprise that stands still risks being swept aside by the onrush of change.

## Conclusion

This paper attempts to examine the trend, the importance, and the factors affecting the relocation of SMIs manufacturing to non-metropolitan areas. Based on this examination, this paper also attempts to relate the effect of this relocation to the economies of the local communities.

The trend of SMIs manufacturing during the 1960s and early 1970s showed a wave of optimism swept across non-metropolitan Canada and the USA. The decentralisation of manufacturing to activities to non-metropolitan areas had accelerated, and as a result, the rate of job growth in non-metropolitan areas surpassed that of metropolitan areas. The examination of previous studies shows that since 1980, the manufacturing growth in non-metropolitan areas lagged behind those of metropolitan areas. The main contributing factor toward this lag is the result of the declining of traditional rural industries such as farming and mining. The other main factor is the event of the global market place. However, rapid growth of high-tech manufacturing in the early 1990s has generated some new prospects for non-metropolitan SMIs especially those with lower-labour-skilled mature high-tech industries. This is consistent with the product life cycle theory of spatial decentralisation. Moreover, the attractiveness of non-metropolitan locations of high-tech SMIs manufacturing should increase as these manufacturing evolve through their product life cycles and production processes become less skilled-labour intensive.

SMIs manufacturing are very important to local economies because they create jobs and other multiplier effects associated with them. Therefore, the policy makers must develop proactive non-metropolitan development programs that address the fundamental deficiencies of size, geographic isolation, leadership, and

technological infrastructure (Glasmeier, 1993). The policies should pay greater attention to improving the competitive position of existing non-metropolitan industries and encouraging the infrequent non-metropolitan entrepreneurs.

Internationalisation of the economy and rapid technological progress in manufacturing production and telecommunication pose challenges and opportunities to non-metropolitan SMIs manufacturing. The emergence of the economy without boarder has encouraged many SMIs manufacturing to look for location overseas where labour costs are low. Non-metropolitan areas must substitute programs and policies that increase their attractiveness to firms in growth phase of their product life cycles and to specialised flexible production units (Barkley, 1993). The development of competitive position in this area requires that non-metropolitan small towns improve labour quality, communication systems, and public services. All these factors are of great importance for SMIs manufacturing to grow.

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Abdul Aziz Ab. Latif
School of Management
Universiti Utara Malaysia
06010 Sintok, Kedah, Malaysia.
e-mail: aziz@webmail.uum.edu.my